

DevNet Zone at **Cisco** *live!*

IMAGINE

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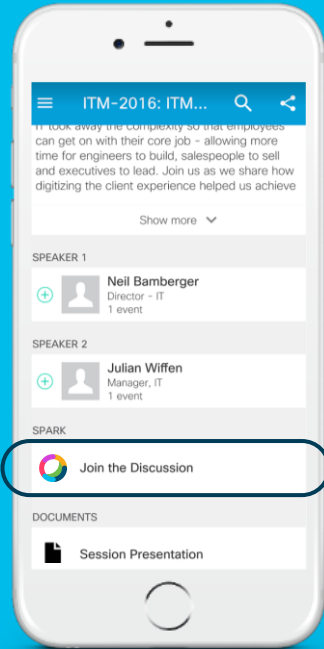


DevNet Workshop Network Plug and Play API on Cisco DNA Center

Adam Radford – Distinguished Systems Engineer
DEVWKS-2424



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cs.co/ciscolivebot#DEVWKS-2424

Cisco Webex Teams

Questions?

Use Cisco Webex Teams (formerly Cisco Spark) to chat with the speaker after the session

How

- 1 Open the Cisco Events Mobile App
- 2 Find your desired session in the “Session Scheduler”
- 3 Click “Join the Discussion”
- 4 Install Webex Teams or go directly to the team space
- 5 Enter messages/questions in the team space

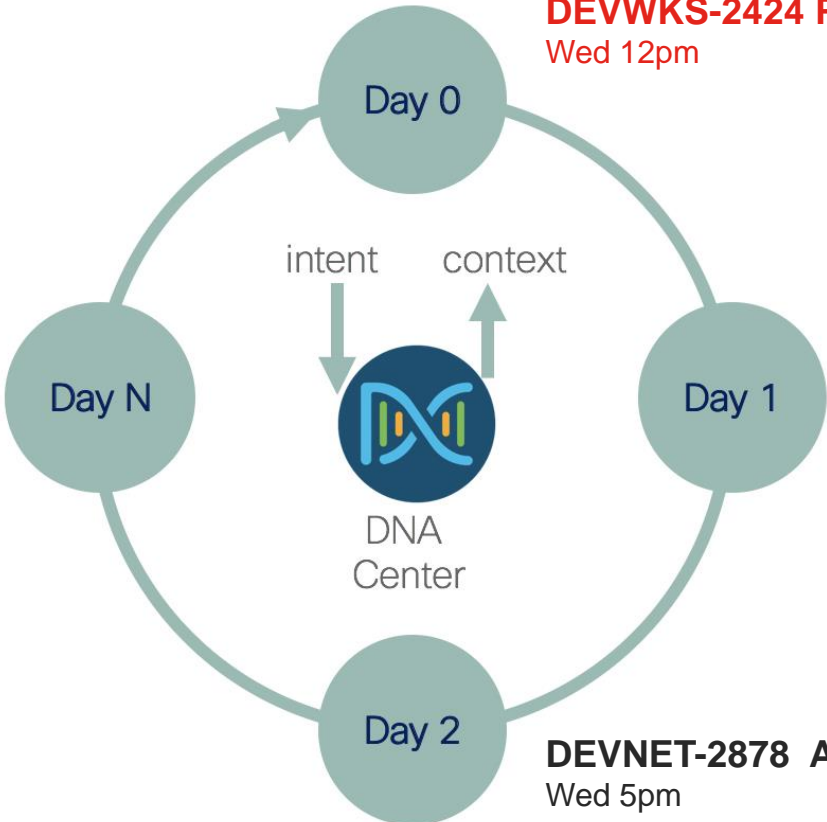
BRKRST-2674 Cisco DNA Center Automation

Day0 – DayN

Thu 12:50pm

DEVWKS-2424 PnP

Wed 12pm



DEVNET-2425 Common Tasks

Fri 9am

DEVWKS-2872 Hands on Intent

Tue 1pm

DEVNET-2878 Assurance

Wed 5pm

DEVWKS-2878 Assurance workshop

Wed 9am

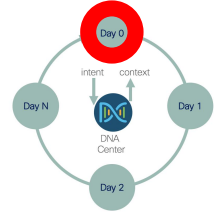
DEVNET-2877 DNACaaP

Tue 3pm

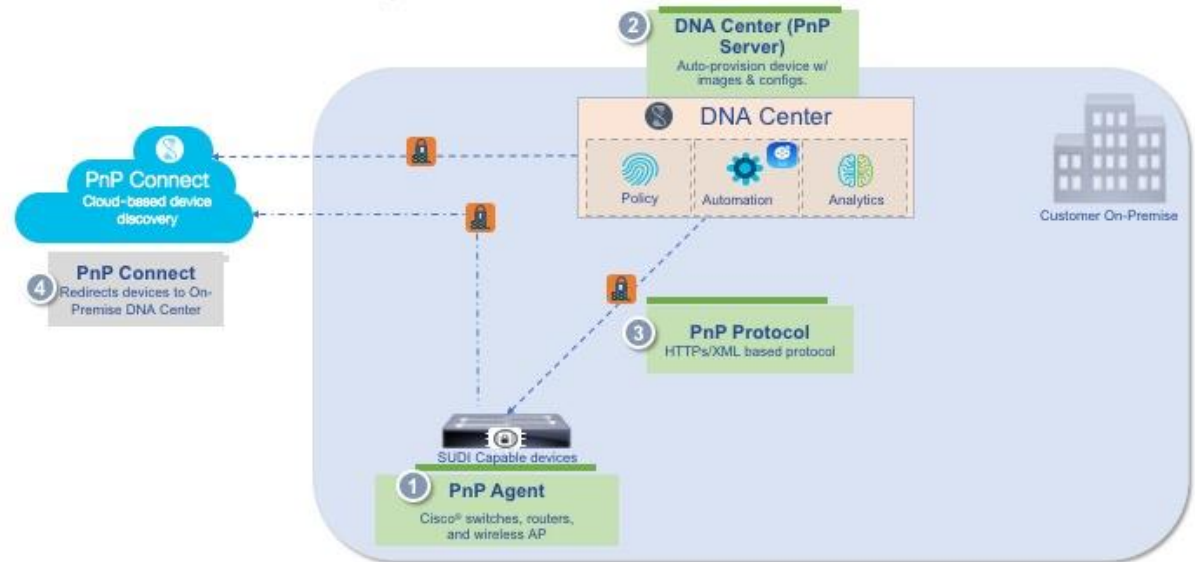
DEVWKS-2879 DNACaaP

Wed-4pm

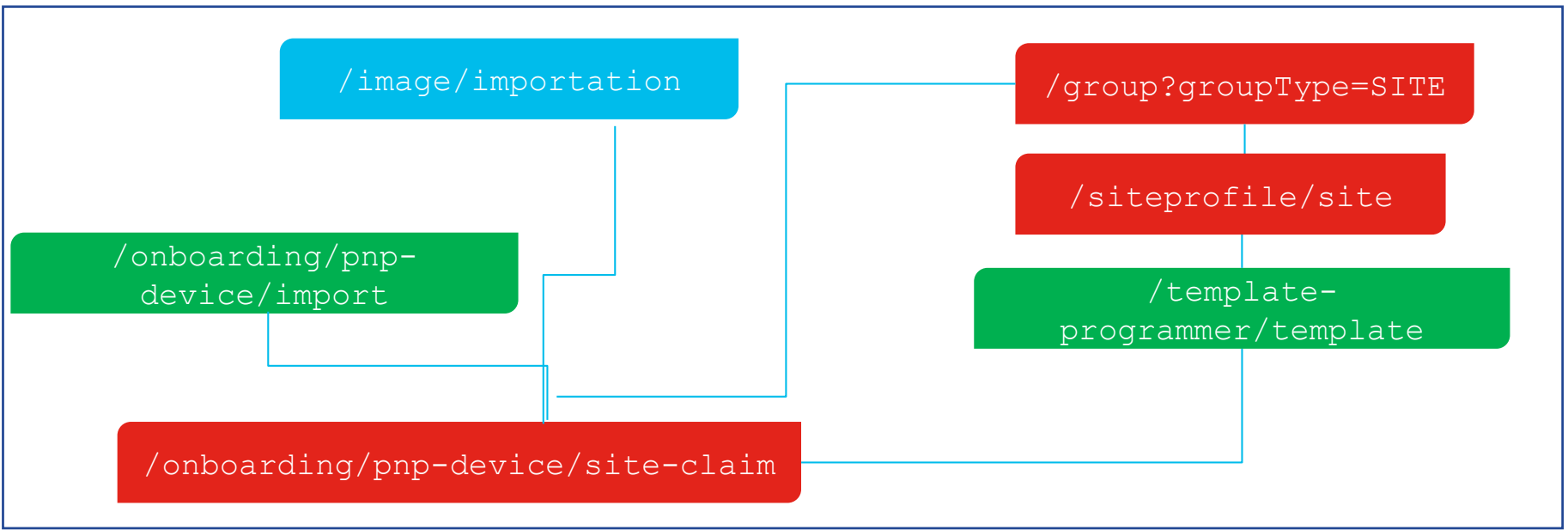
Day 0



PnP Solution Components

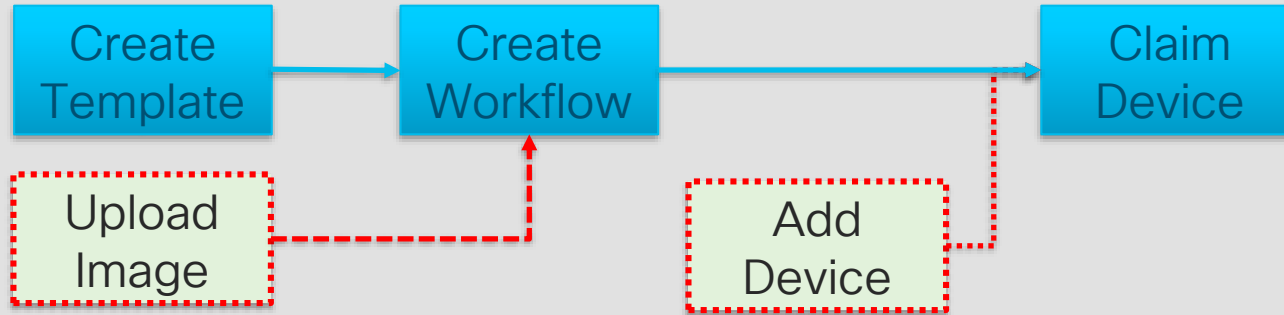


Relationships – post 1.2.8

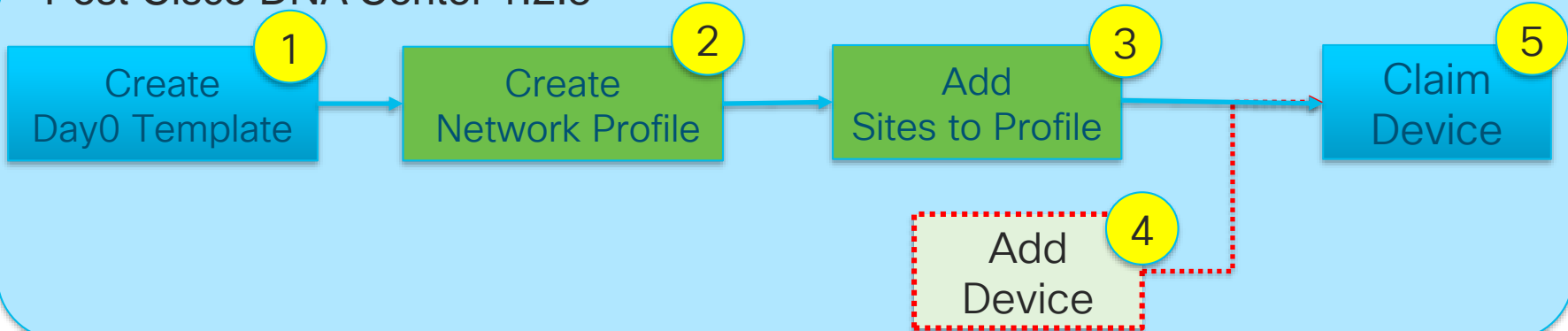


new

Pre Cisco DNA Center 1.2.8



Post Cisco DNA Center 1.2.8



Automate Onboarding Rules

CISCO DNA CENTER DESIGN POLICY **PROVISION** ASSURANCE PLATFORM

Devices Fabric

Inventory **Plug and Play**

Plug and Play Devices (9) Last updated: 10:46 am [Refresh](#)

[Filter](#) | [Actions](#) EQ Find

<input type="checkbox"/>	Name	Serial Number	Product ID	Source	State	Site	Last Contact
<input type="checkbox"/>	auto_python8	12345678918	WS-C3650	User	Planned	Global/EU/Barcelona	Not Contacted
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<input type="checkbox"/>	auto_python6	12345678916	WS-C3650	User	Planned	Global/EU/Barcelona	Not Contacted
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<input type="checkbox"/>	auto_python0	12345678910	WS-C3650	User	Planned	Global/EU/Barcelona	Not Contacted

Examples

```
# change to the new workflow repository in 1.2.8
```

```
cd PnP-BulkConfig-128
```

```
./00_pnp_devices.py
```

```
./10_add_and_claim.py work_files/bigtest.csv
```

```
./12_delete.py 12345678910
```

```
./12_delete.py work_files/bigtest.csv
```

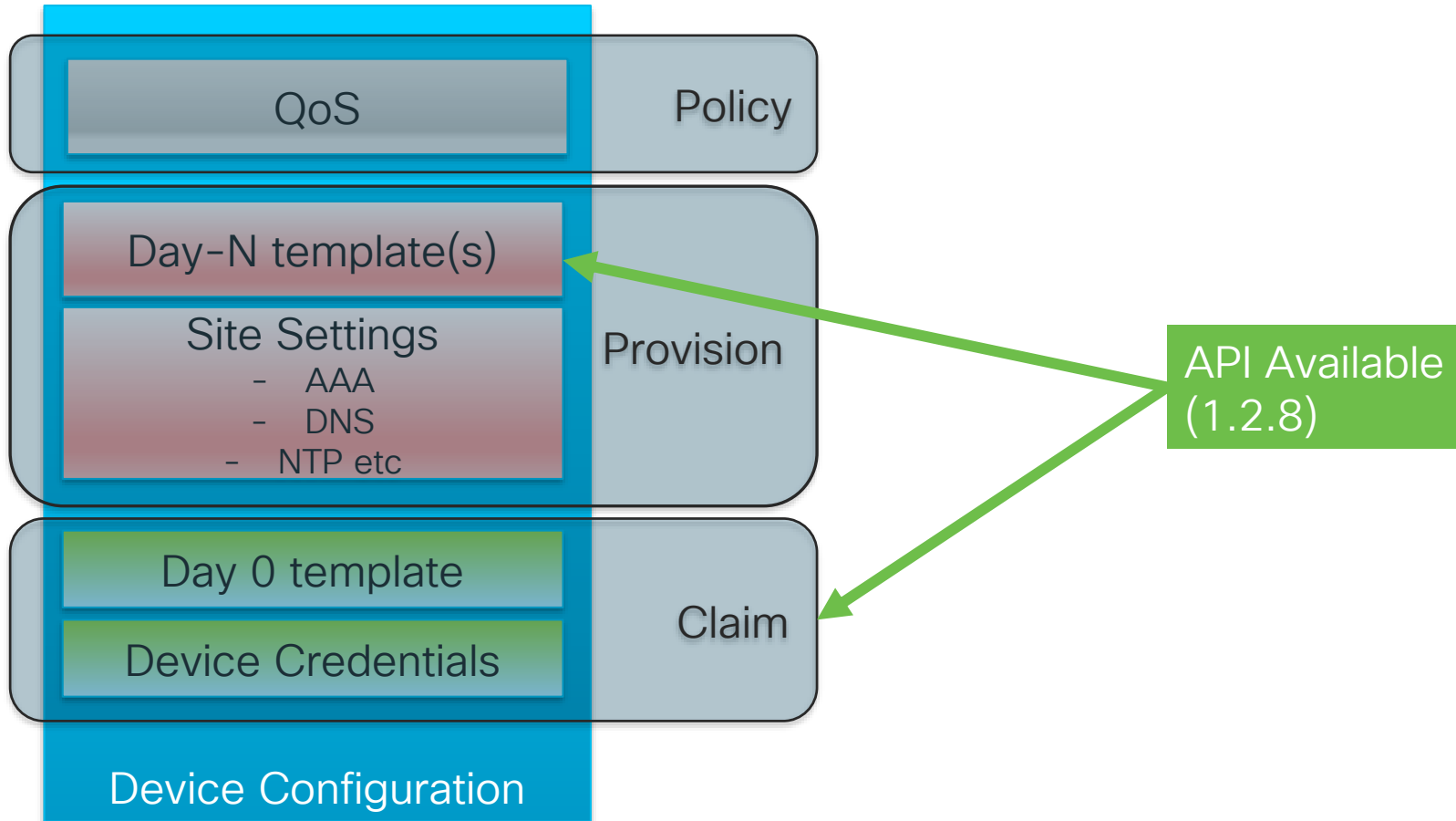
<https://github.com/CiscoDevNet/DNAC-onboarding-tools>

Notes

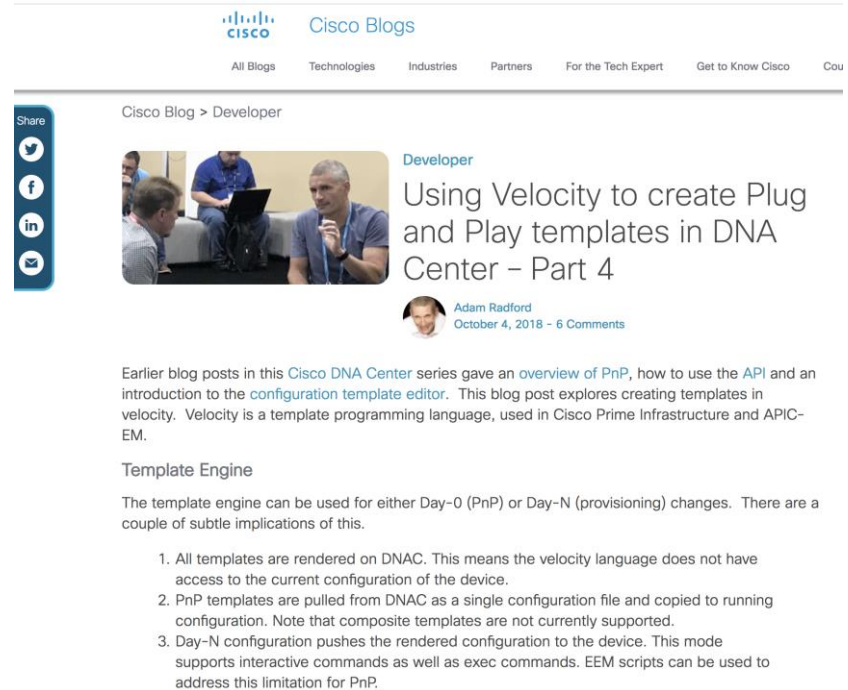
- No current way to upload an .xls of template variables for PnP provisioning rules, hence use API
- Composite templates are not supported for PnP
- Day 0 is typically a bootstrap config, pretty common across all devices in all locations, but can be more specific. Operational choice.

PNP API Summary

Endpoint	Verb	Description
api/v1/onboarding/workflow	GET/POST/DELETE	CRUD on workflows
api/v1/onboarding/pnp-device/import	POST	Add a device for pre-provisioned workflow. Needs to be claimed.
api/v1/onboarding/pnp-device/import	POST	Claim a device. Attach a workflow to it
api/v1/onboarding/pnp-device	GET/PUT/POST/DELETE	CRUD on devices
api/v1/file/config	POST	upload an config file, rather than use a template



Velocity Templates



The screenshot shows a Cisco Blog page for the 'Developer' category. The main article is titled 'Using Velocity to create Plug and Play templates in DNA Center - Part 4' by Adam Radford, dated October 4, 2018, with 6 comments. The article text includes an introduction to Velocity as a template programming language and a section titled 'Template Engine' which explains its use for Day-0 and Day-N changes. A numbered list of three points details how templates are rendered on DNAC and how they are pushed to devices.

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Using Velocity to create Plug and Play templates in DNA Center - Part 4

Adam Radford
October 4, 2018 - 6 Comments

Earlier blog posts in this [Cisco DNA Center](#) series gave an [overview of PnP](#), how to use the [API](#) and an introduction to the [configuration template editor](#). This blog post explores creating templates in velocity. Velocity is a template programming language, used in Cisco Prime Infrastructure and APIC-EM.

Template Engine

The template engine can be used for either Day-0 (PnP) or Day-N (provisioning) changes. There are a couple of subtle implications of this.

1. All templates are rendered on DNAC. This means the velocity language does not have access to the current configuration of the device.
2. PnP templates are pulled from DNAC as a single configuration file and copied to running configuration. Note that composite templates are not currently supported.
3. Day-N configuration pushes the rendered configuration to the device. This mode supports interactive commands as well as exec commands. EEM scripts can be used to address this limitation for PnP.

<https://blogs.cisco.com/developer/using-velocity-to-create-plug-and-play-templates-in-dna-center-part-4>



Q & A



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DevNet Code Exchange



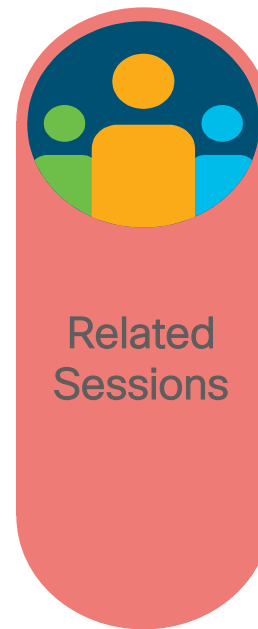
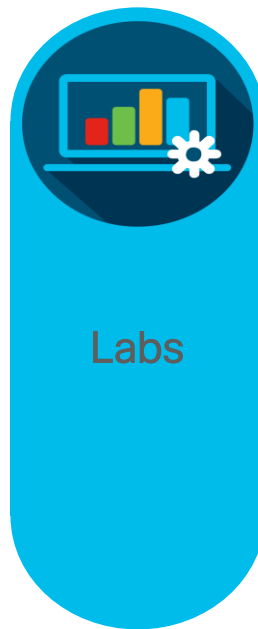
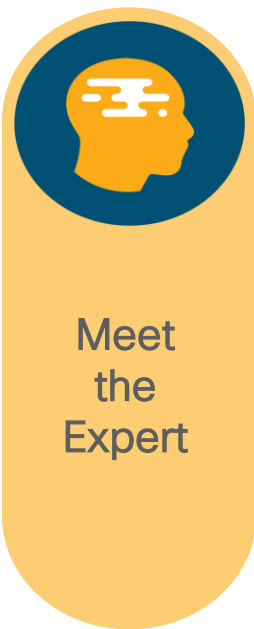
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Get your code in front of the DevNet Community

developer.cisco.com/codeexchange

Continue your education



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- All evaluations can be completed via the Cisco Live Melbourne Mobile App.
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Thank you



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